The UNIVERSITY of VERMONT

CAMPUS PLANNING SERVICES
http://www.uvm.edu/~plan/

July 1, 2015

Burlington Department of Planning & Zoning
149 Church Street
Burlington, VT 05401
Attn: Scott Gustin, Senior Planner

RE: Building and Enclosure Expansion at the Central Heating & Chiller Plant
187 Carrigan Drive, University of Vermont

Dear Scott,

The University is requesting a zoning permit to upgrade the Central Heating and Chiller Plant's cooling capacity to serve the new buildings on campus.

This Project consists of a building addition to the University's Central Heating and Chiller Plant (CHCP), which will contain an additional two chiller units and an expansion of the existing exterior (roofless) enclosure. The additional capacity will serve the new buildings that have recently been permitted by the City, (i.e., STEM and the new First-Year Student Housing and Dining Facility), as well as provide additional capacity for future needs.

The Central Heating & Chiller Plant is the heart of the district heating and cooling systems on the campus of the University of Vermont. This is the central heating and cooling source for the Main and South campuses in the cities of Burlington and South Burlington. Nine years ago, as part of the University's commitment to both environmental excellence and year round activity, the University installed centralized chillers on the north side of the existing Central Heating Plant (now CHCP). This approach increased efficiency and reduced electricity use, compared to installing individual chillers for air conditioning in each building on campus. Those chillers necessitated cooling towers, located about 40' north of the CHP that are presently, visually and acoustically shielded by the existing roofless enclosure.

This Project will include a building addition constructed on the east face that complements the existing architecture and extends outward by approximately 40 feet. A large chiller, cooling tower, and their associated pumps will be added into the existing piping networks. The infrastructure to add additional equipment when needed in the future is also included.

The new cooling towers will be located within an enlarged roofless enclosure that will encompass the existing cooling towers, enlarging it and creating a unified façade around the equipment. The architecture and the siting of the addition and the enclosure are designed to be compatible with the academic and student housing activities that are proximate to the CHCP.

The existing CHCP is the central point for the generation of campus steam for heating both the University's Main and South Campus facilities. Steam is also used for powering the existing chillers thru a steam turbine in lieu of an electric motor. This location has all the pumps centrally located for distribution to all the surrounding buildings. It is impractical to locate the pumps anywhere else as they must reside near the cooling equipment.

The design and location of the addition and enlarged enclosure is designed to be as compact as possible, taking into account the aesthetics and circulation requirements within this central hub of the University's Main Campus.

The building addition will be brick faced, 89' long, 38' wide, one main story with a mezzanine level and a cupula. The height is about 42', slightly lower than the Central Heating and Chiller Plant.

The enclosure will encompass and replace the existing enclosure and visually and acoustically screen the cooling towers. It is designed to be visually appealing and to be well integrated with the existing surrounding buildings. The rounded wall of the enclosure will define the courtyard, seating area and main entry space to the new STEM facility to the north of the CHCP.

The enclosure will be approximately 116' wide, 105' long, and approximately 25'-30' in total height. The wall will be brick with a 7' metal panel top and recessed brick bands above a granite base.

Two existing accessible parking spaces will be replaced a bit farther west on the same site. Twelve existing service parking spaces on the south and east sides of the CHCP will be removed. Existing service parking inventory on adjacent parts of the campus can absorb the removal of these parking spaces.

This project will not be visible from public streets.

The University has retained an historic buildings consultant and we are working with the State Historic Preservation Office to ensure that both the building addition and the cooling tower enclosure wall will complement the existing historic architecture as well as the proposed new buildings.

The building addition, enlarged enclosure and surrounding areas will be lit with a combination of freestanding UVM light poles in UVM's standard lighting design, and building mounted lights near entryways. See lighting plans LC1-4 for more details.

This Project is located within the Institutional Core Campus Overlay (ICC-UVM) zoning district. The current lot coverage for this zoning district, assuming the completion of previously permitted projects (i.e., STEM, Housing, and CBW Residence Complex demolition), is 49.41%. With the completion of this project, there will be a net increase of impervious surface, calculated to be 49.54% lot coverage within the allowed 65% coverage in this ICC-UVM district.

Upon successful permitting of the Project, it is expected that construction will take 12-months with start of construction to begin in October 2015.

Estimated total cost is projected at $ 9,284,000.

Enclosed please find a check for the application fee of $ 18,678. This is based on Level II fees of $2 per $1,000 construction costs, plus $100 and $10 for filing.

Please let me know if you have any questions or need any further clarification to proceed with the review of this application.

Sincerely,

Lani Ravin, AICP, Associate Planner
Campus Planning Services

cc:
Linda Seavey, Director of Campus Planning Services, UVM
Todd Merchant, UVM Project Manager
Michael Pelletier, Physical Plant Department

Attachments:
Zoning Permit Application – UVM Central Chilled Water Enclosure
Check # 1353465 for $18,678
EPSC application
Lighting specs: 5 pages
Drawings: T0.01, C-1.01, C-1.02, C-1.03, C-1.04, C-1.05, C-1.06, C-1.07, C-1.08, C-1.09, C-1.10, A1.01, A1.02, A-1.03, A3.01, A3.02, A3.03, View from Northeast, East Elevation, North & South Elevations, Combined East Elevation, East Screen Wall Elevation, North & West Screen Wall Elevations, View of Addition with Electrical, LC-1, LC-2, LC-3, LC-4

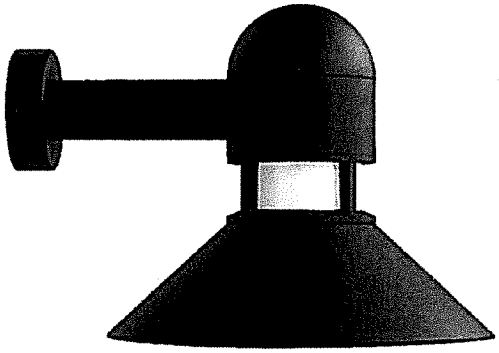
TYPE 'D'

LUMINAIRE SPECIFICATION

LIGMAN LIGHTING USA

Head Office: Tel: 503-645-0500
7144 NW Progress Ct Fax: 503-645-8100
Hillsboro, Oregon 97124
www.ligmanlightingusa.com

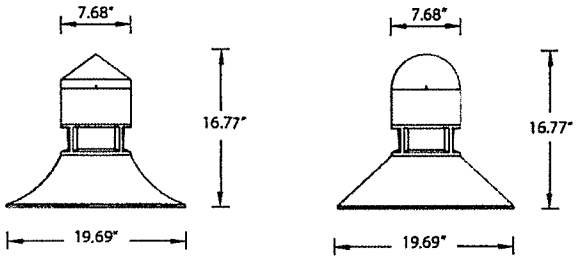
IP55 : Suitable for Wet Locations
IK07 : Impact Resistant (Vandal Resistant)

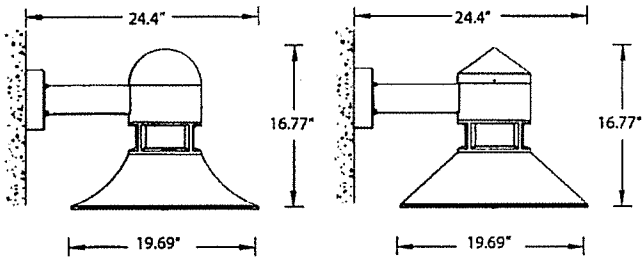


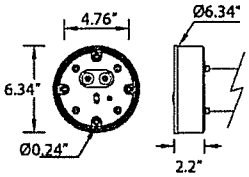
UCO-32113

Columbus medium shade wall light LED

A small and medium size shade decorative wall lantern with symmetrical light distribution. Developed to compliment the Columbus bollard and Columbus pillar light. Designed for lighting of entrances and footpaths.
Low copper content die cast housing with high corrosion resistance. Stainless steel screws. Durable silicone rubber gasket and opal glass diffuser. Housing is treated with a chemical chromatized protection before powder coating, ensuring high corrosion resistance. Integral control gear.







Mounting detail

Physical Data
Length: 7.68"
Height: 16.77"
Weight: 19.8 lbs

Lamp
☐ 41w - 2080lm - White - LED

LED Color (Please Specify)
☐ W27 - 2700K
☐ W30 - 3000K
☐ W40 - 4000K

Voltage (Please Specify)
☐ 120V
☐ 277V
☐ Other _____

Options (Please Specify)

Color (Please Specify)

☐ 01-Black - RAL 9011
☐ 02- Dark Grey - RAL 7043
☐ 03-White - RAL 9003
☐ 04 - Metallic Silver - RAL 9006
☐ 05-Matt Silver - RAL 9006
☐ 07- Custom - RAL _____
☐ 06-Bronze - RAL 6014

Top Style

☐ D - Dome

☐ C - Cone Top

Shade Style

☐ Swept Shade

☐ Straight Shade

Ordering Example : UCO - 32113 - White-41w - W30 - 120v - Options

PROJECT: _____ DATE: _____

TYPE: _____ QUANTITY: _____ NOTE: _____

Rev: 11/13

TYPE 'E'

BEGA Lichttechnische Spezialfabrik
Hennerbusch · D - 58708 Menden

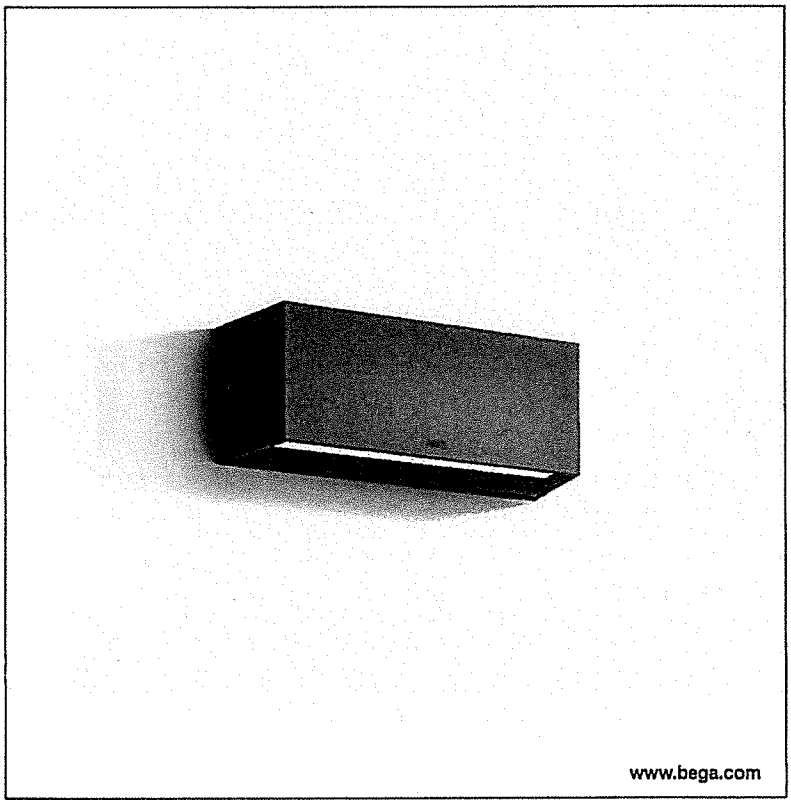
BEGA

Product data sheet	Wall luminaire	IP 65	**2360**

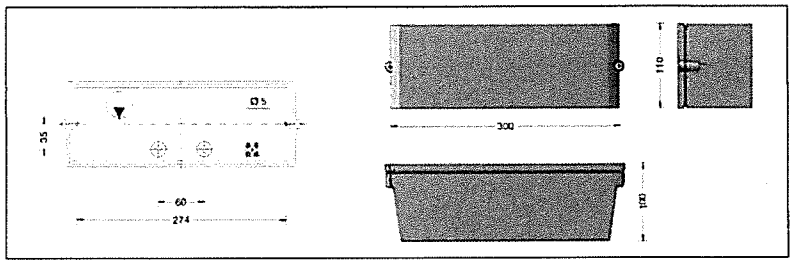
Project · Reference number	Date

Application
Wall luminaire with shielded light source.
A luminaire of high protection class and single-sided, downwards directed light sector.
For a variety of lighting tasks in interior and exterior lighting applications.
The used LED technique offers durability and optimal light output with low power consumption at the same time.

Product description
Luminaire made of aluminium alloy, aluminium and stainless steel
Matt safety glass
Silicone gasket
Reflector made of anodised pure aluminium
2 fixing holes ø 5 mm
274 mm spacing
2 cable entries for through-wiring of mains supply cable up to ø 10.5 mm
max. 3 x 1.5□
Connecting terminal and earth conductor terminal 2.5□
LED-Power supply unit
220-240 V ∿ 0/50-60 Hz
DC 176-264 V
Safety class I
Protection class IP 65
Dust tight and protection against water jets
CE – Conformity mark
Weight: 2.0 kg



www.bega.com



Lamp

LED 3000 K	21 W
Connected wattage	25.2 W
Lamp luminous flux	2240 lm
Luminaire luminous flux	607 lm
Colour rendering index	R_a > 80
Article No.	2x LED-0269/830
LED 4000 K	21 W
Connected wattage	25.2 W
Lamp luminous flux	2400 lm
Luminaire luminous flux	658 lm
Colour rendering index	R_a > 80
Article No.	2x LED-0269/840

Article No. 2360
Colour temperature 3000 K.
Also available with 4000 K on request.
3000 K – article number
4000 K – article number + **K4**

Colour graphite, white or silver
graphite – article number
white – article number + **W**
silver – article number + **A**

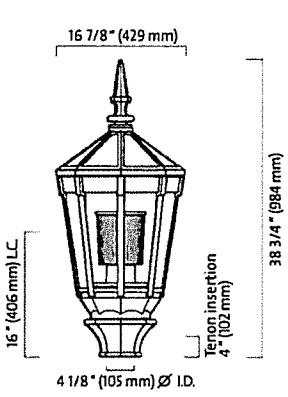
Type 'H'

BENEFITS

- Constructed from top-quality materials, the Octagonal Lantern Series maintains excellent performance in even the most demanding environment.
- Creates a unique atmosphere and ambiance.
- Prismatic RR optics, SE cut-off reflectors, and the RACE optical system, are available to meet a range of lighting applications.
- The luminaire is sealed with a gasketed closure to maintain optical performance.
- A complete selection of materials and finishes are available to complement any project.

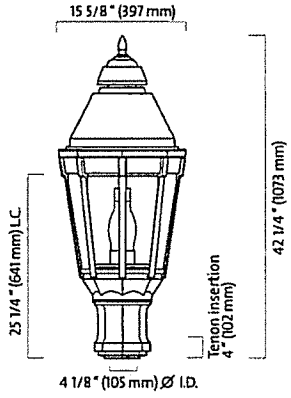
LUMINAIRES

*Conform to the **UL 1598** and **CSA C22.2 No. 250.0-08** standards*



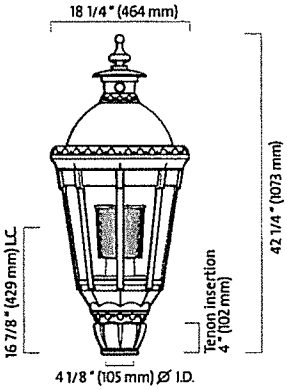
L70-RR-SF70

EPA: 2.71 sq. ft.
Weight: 48 lbs (21.8 kg)



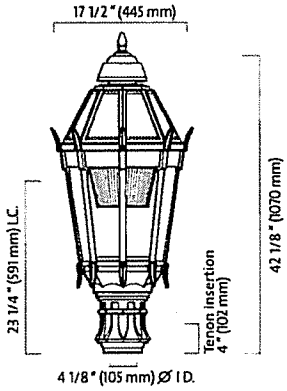
L71-SE-SF71

EPA: 2.76 sq. ft.
Weight: 36 lbs (16.3 kg)



L72-RR-SF72-PH8

EPA: 2.91 sq. ft.
Weight: 48 lbS (21.8 kg)



L73-RACE-SF73-HK16

EPA: 3.18 sq. ft.
Weight: 48 lbS (21.8 kg)

› Les luminaires s'accompagnent de l'une de ces lentilles, au choix

PC-C	Polycarbonate clair
PC-O	Polycarbonate opalin
PC-BR	Polycarbonate Bronze
PC-FC	Polycarbonate givré clair
GL-C	Verre trempé clair
GL-BR	Verre trempé bronze
GLBG-C	Verre trempé biseauté clair
GLBG-BR	Verre trempé biseauté bronze
GL-FC	Verre trempé givré clair

Type 'H'

LAMPS / HID

WATTAGE	RACE	RR	SE
50 MH, medium	✓	✓	✓
70 MH, medium	✓	✓	✓
100 MH, medium	✓	✓	✓
150 MH, medium	✓	✓	✓
1250 PSMH, mogul	✓	✓	✓
1250 MH, mogul	✓	✓	✓
35 HPS, mogul	✓	✓	✓
50 HPS, mogul	✓	✓	✓
70 HPS, mogul	✓	✓	✓
100 HPS, mogul	✓	✓	✓
150 HPS, mogul	✓	✓	✓

✓ : Available 1 : N/A with a PC Globe

OPTICAL SYSTEMS / HID

(Lamps not included)

RR Optics
Round borosilicate refractor

RR5: Symmetrical
RR3: Asymmetrical
RR3MD: Asymmetrical with medium deflector

SE Optics
Hydro-formed cut-off reflector system set in faceted arc-image duplicating patterns.

SE5: Symmetrical
SE3: Asymmetrical

> House shield available in option (HS)

RACE Optics
Round acrylic (max. 100w) or borosilicate (150w and more) refractor with segmented uplight recovery dome.

RACE5: Symmetrical
RACE3: Asymmetrical
RACE3D: Asymmetrical with deflector

* Photometry available on Philips Lumec web site www.lumec.com

VOLTAGE

120 / 208 / 240 / 277 / 347 / 480

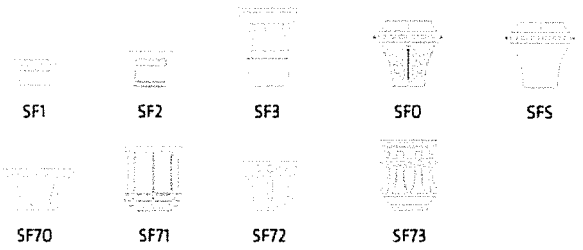
> Multi-tap ballast also available.

TYPE 'H'

LUMINAIRE OPTIONS

GT	**Glow top** (RR optical, max. 175w with L70 and L72 only)
HS	**House shield** (for SE only)
CPT	**Copper finial** (L71, L72 and L73 only)
CPTC	**Varnished copper cupola** (L71, L72 and L73 only)
HK8	**Decorative hooks / top only** (L70, L71 and L73 only)
HK16	**Decorative hooks / top and bottom** (L70, L71 and L73 only)
PH8	**Quarter-turn photoelectric cell** (not available with GT option)
PH9	**Quarter-turn shorting cap** (not available with GT option)

ADAPTORS



SF1 SF2 SF3 SF0 SF5

SF70 SF71 SF72 SF73

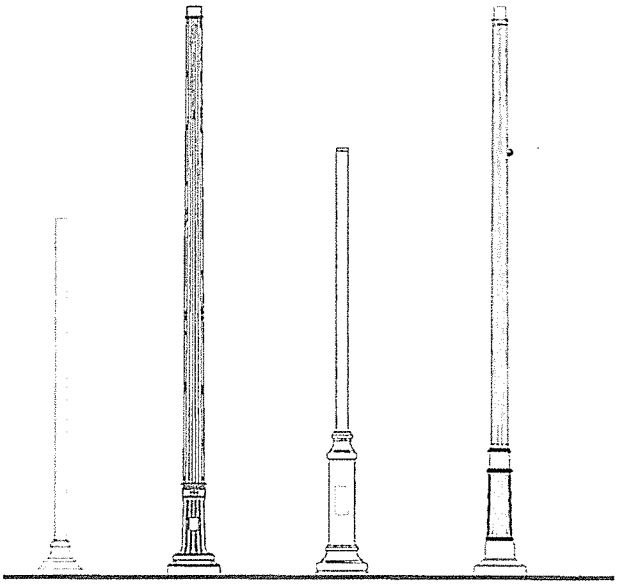
MOUNTINGS

(Consult the Pole Guide for details and the complete line of mountings)

CRA CRC CRD CRF

POLES AND POLE OPTIONS

(Consult the Pole Guide for details and the complete line of poles)



APR4 LBC3 P900 RA61 RTAF800

FINISHES

(Consult Philips Lumec's Color Chart for complete specifications)

The specially formulated **Lumital** powder coat finish is available in a range of many standard colors.

ORDERING SAMPLE

LUMINAIRE	LAMP	OPTICAL SYSTEM	VOLTAGE	ADAPTOR	OPTIONS	MOUNTING & CONFIGURATION	POLE	FINISH
L70-PCC	100 HPS	RR	120	SF72	HK16	SF70-CRA-16	R80A-16	RD2-TX

PHILIPS
LUMEC